

86

SERVICE MANUAL



FISHER

MT-870

**Full-Automatic
Linear Tracking Turntable
(EUROPE)**



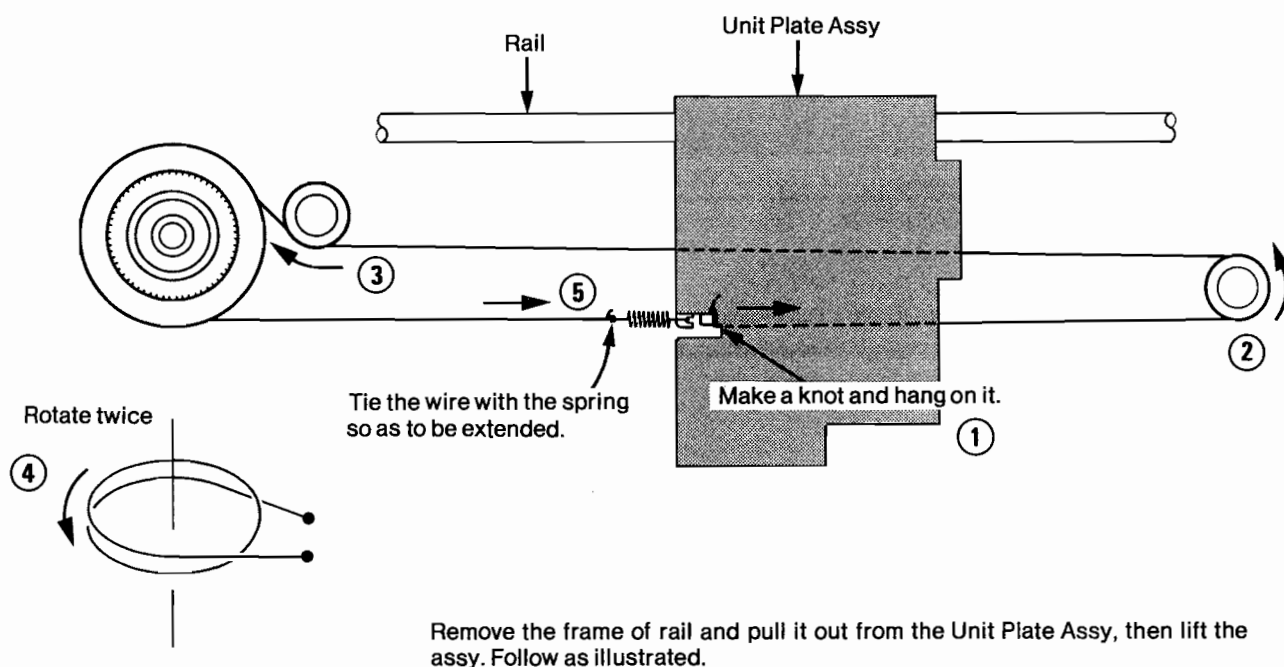
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WM-16939

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ARM FEED CORD STRINGING

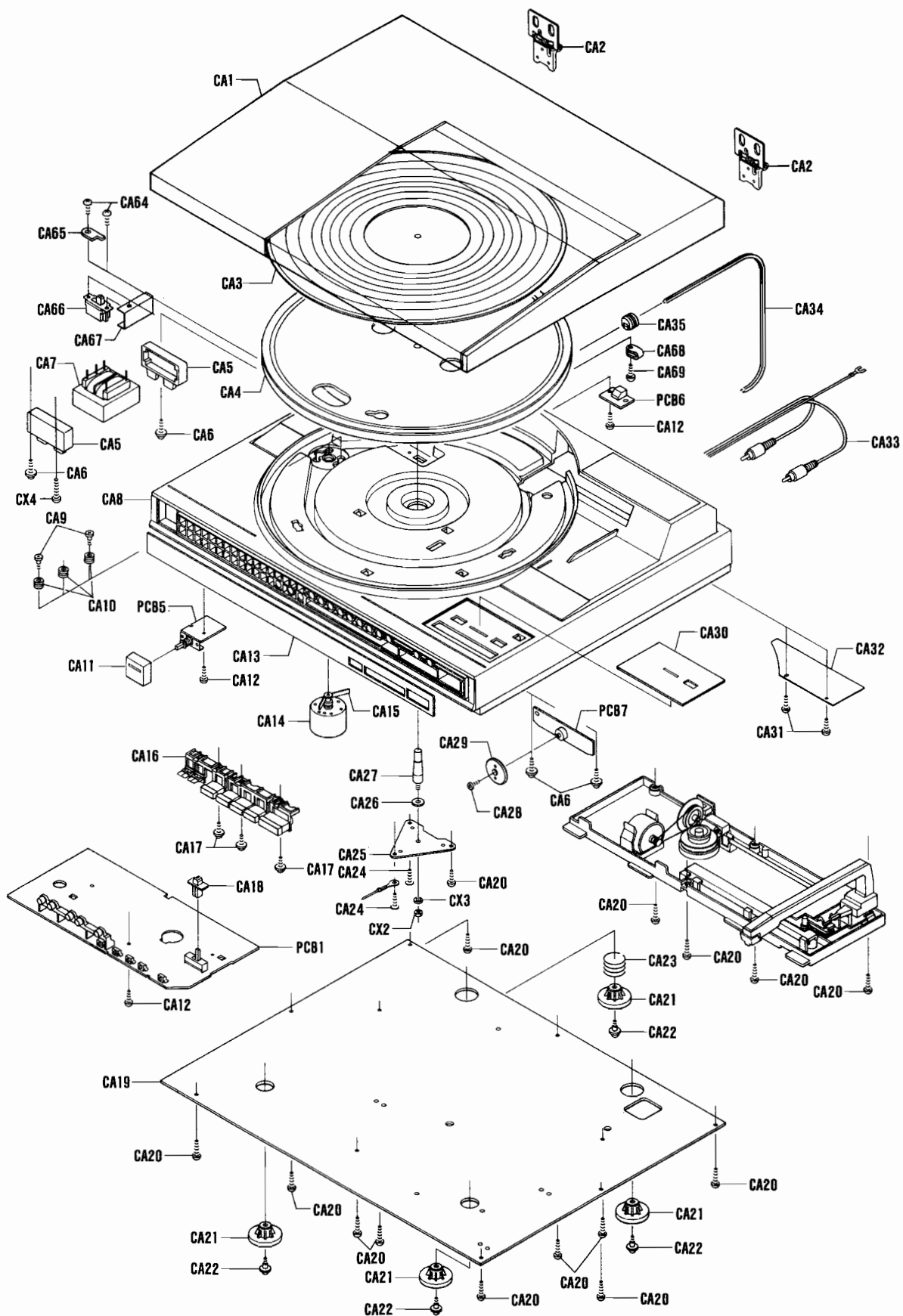


SPECIFICATIONS

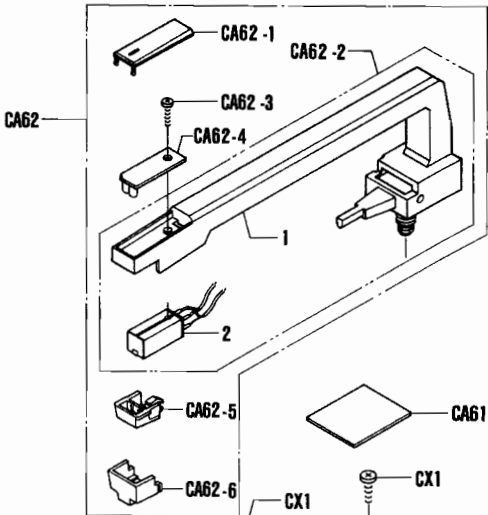
TURNTABLE		MT-870
Motor		DC Servo
Drive System		Belt
Wow and Flutter (WRMS)		0.035 %
Rumble (DIN 45539B)		-70 dB
Speed Variation		±1.5 %
Platter Diameter		300 mm
Platter Weight		0.4 kg
Record Speed Selector		33-1/3 rpm / 45 rpm
Automatic Functions	Start	Yes
	Stop	Yes
	Reject	Yes
	Repeat	Yes
Automatic Tonearm Return at End of Record		Yes
Manual Functions	Start	Yes
	Stop	Yes
Tonearm Data	Resonance	< 18 Hz
	Effective Length	130 mm
	Shape	Straight
Max. Tracking Error		±0.2°
Cueing		Viscous Damped
GENERAL		
Power Requirements		AC 110 / 220 V 50 Hz
Power Consumption		10 Watts
Dimensions (W x H x D)		440 x 97 x 360 mm
Weight (approx.)		3.8 kg

Because its products are subject to continuous improvement, Fisher Corporation reserves the right to modify product designs and specifications without notice and without incurring any obligation.

CABINET & CHASSIS EXPLODED VIEW



(Continued)



CABINET & CHASSIS PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol Δ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with Δ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.

Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
PACKAGE				CA15	134-2-6302-11601	Belt	1
	131-6-3069-17050	Patching Sheet	1	CA16	141-0-1619-36200	Knob Assy	1
	131-6-9439-00400	Ribbon	2	CA17	131-2-4201-25200	Screw, Brazier Hd. Tapping, +M3.0x6	3
	134-2-2104-12700	Screw Transit	1	CA18	141-2-1649-38800	Knob	1
	141-6-1139-98320	Box Corrugate-exp	1	CA19	141-2-1259-10200	Plate Bottom	1
	141-6-2519-19490	Bag Polyethylene-exp	1	CA20	131-2-4201-19503	Screw, Button Hd. Tapping	17
	141-6-2519-20990	Bag Polyethylene-exp	1	CA21	141-2-4459-36500	Cushion	4
	141-6-3119-23401	Pad	1	CA22	134-2-4201-13400	Screw	4
	141-6-3119-24900	Pad Front	1	CA23	141-2-8559-06505	Spring Mounting	1
	141-6-3119-25000	Pad Rear	1	CA24	131-2-4201-23703	Screw	2
	141-6-3119-25100	Pad	1	CA25	141-2-3519-80000	Plate Shaft Turntable	1
	141-6-3119-32200	Pad	1	CA26	141-2-4569-09900	Washer	2
	141-6-3119-33200	Pad	1	CA27	141-0-7519-05000	Shaft Turntable Complet	1
	141-6-3319-13200	Spacer	3	CA28	131-2-4201-24600	Screw	1
	141-6-4159-00639	Notes	1	CA29	131-2-1601-59501	Knob	1
	141-6-4559-03300	Serial No. Sheet	2	CA30	141-2-1449-72901	Plate Control	1
ACCESSORIES				CA31	131-2-4201-20801	Screw, +M2.6x8	2
	4-2359-79333	Connector 3P Assy	1	CA32	141-2-1149-51900	Cover	1
	131-6-2719-10401	Bag Fan	1	CA33	4-2369-75370	Plug Cord RCA [CN1]	1
	134-2-2901-11601	Adapter EP	1	CA34	Δ 4-2432-00502	Power Cord	1
	142-6-4119-32943	Explanatory Booklet	1	CA35	131-2-6111-22900	Bushing	1
CABINET				CA36	141-2-7519-75700	Cam	1
	4-2359-79183	Connector 4P Assy [CN5]	1	CA37	141-2-3169-30000	Guide Frame	1
	4-2359-79252	Connector 3P Assy [CN6]	1	CA38	141-2-4459-40100	Cushion	3
	4-2439-72860	Wire 2 Parallel (Arm Motor)	1	CA39	141-2-8519-01800	Spring Rewind Roller	1
	131-2-1310-34661	Name Plate	1	CA40	134-0-5011-04300	Motor Assy (Arm) [M2]	1
	131-2-7103-46801	Label	1	CA41	141-2-4459-39500	Cushion	1
	141-2-4419-24600	Cloth	1	CA42	141-2-5519-65000	Worm Wheel(D)	1
	141-2-4459-40400	Cushion	1	CA43	134-2-4106-27002	Shaft	1
	141-2-4459-40500	Cushion	1	CA44	141-2-4219-40600	Screw	2
	141-2-4729-07100	Wire Band	12	CA45	141-2-3519-75000	Plate	1
	141-6-3119-32300	Pad	1	CA46	141-2-5649-25000	Belt	1
	141-6-4559-03300	Serial No. Sheet	1	CA47	141-0-5519-10301	Worm Assy	1
	141-6-4729-37686	Stylus Label	1	CA48	141-2-5739-07600	Support Shaft	1
	141-6-4729-37695	Label	1	CA49	141-2-5289-01700	Rail	1
CA1	141-0-1249-30600	Lid Assy	1	CA50	131-0-3020-11000	Pully Assy	2
CA2	141-0-2519-00902	Hinge Assy	2	CA51	131-2-4112-10200	Rope	1
CA3	141-2-4429-00100	Mat Turntable	1	CA52	141-2-8519-43500	Spring Lever Play	1
CA4	141-2-5229-00200	Turntable	1	CA53	131-2-4202-11600	Nut	1
CA5	141-2-4459-34400	Cushion	2	CA54	141-2-4569-04300	Washer	1
CA6	131-2-4201-28202	Screw	4	CA55	141-0-3129-02500	Unit Plate Assy	1
CA7	Δ 4-2512-30521	Power Trans [T1]	1	CA56	141-0-7439-19400	Lifter Arm Assy	1
CA8	141-2-1129-43000	Cabinet	1	CA57	141-2-5729-22700	Boss	1
CA9	134-2-4201-13600	Screw	2	CA58	141-2-8549-32600	Spring	1
CA10	134-2-5202-11800	Rubber Cushion	3	CA59	141-2-8559-14700	Spring	1
CA11	131-2-1601-85207	Knob Power	1	CA60	4-2649-70790	Solenoid [SL1]	1
CA12	131-2-4201-19501	Screw, Button Hd. Tapping	3	CA61	141-2-1149-50700	Cover Plate	1
CA13	141-2-1449-73000	Plate Control	1	CA62	141-0-6419-02400	Pick-up Assy	1
CA14	134-0-5011-04200	Motor Assy (Phono) [M1]	1	CA62-1	141-2-3519-82100	Cover	1
				CA62-2	141-0-6419-02500	Tone Arm Assy	1
				1	141-2-6419-00500	Tone Arm	1
				2	4-1579-70190	Cartridge (MG-103S)	1
				CA62-3	101-3-1702-00611	Screw, Bind Hd., +M2.0x6	1

CABINET & CHASSIS PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
CA62-4	141-0-1939-16950	P.C.B. Assy	1
CA62-5	4-1579-70200	Stylus (ST-103SD)	1
CA62-6	141-2-6459-00600	Retainer Needle	1
CA63	141-2-1259-09300	Plate Bottom	1
CA64	131-2-4201-20300	Screw	2
CA65	131-2-7104-00101	Plate Pad Switch	1
CA66	Δ 4-2312-01020	Switch Slide (Voltage Select) [S8]	1
CA67	131-2-6107-31600	Plate Sever	1
CA68	131-2-3608-12404	Cramp Wire	1
CA69	131-2-4201-25205	Screw	1
CA70	131-2-4220-10507	Ring Snap	1
CX1	143-3-1703-00811	Screw, Bind Hd. Tapping-B, +M3.0x8	2
CX2	106-3-1304-00011	Hex. Nut-3, M4.0	1
CX3	110-3-2104-00011	Spring Washer-2, M4.0	1
CX4	143-3-1304-02511	Screw, Pan Hd. Tapping-B, +M4.0x25	1
PCB1	141-0-1939-15352	Control P.C.B. Assy	1
PCB2	141-0-1939-15390	LED P.C.B. Assy	1
PCB3	141-0-1939-15400	Sensor P.C.B. Assy	1
PCB4	141-0-1939-15410	Pulse P.C.B. Assy	1
PCB5	141-0-1939-15360	Power Switch P.C.B. Assy	1
PCB6	141-0-1939-15370	Remote P.C.B. Assy	1
PCB7	141-0-1939-15380	Approach P.C.B. Assy	1

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

TURNTABLE ADJUSTMENTS

BEFORE ATTEMPTING ADJUSTMENT

1. Adjustments through the rear of the cabinet should be carried out from the bottom with the cabinet placed firmly on a level base.
2. Carry out adjustment procedures in the order given here.

MEASURING INSTRUMENTS REQUIRED

- Stroboscope Sheet
- Standard reflective plate
- DC VTVM (DC voltmeter with high impedance)
- Screw driver

STYLUS HEIGHT ADJUSTMENT

1. Remove the turntable mat and belt and turn the power on.
2. Press the ◀ button and move the tone arm so that the stylus height adjustment screw can be seen in the turntable aperture (see Fig.1).
3. Turn the adjustment screw so that the stylus height is 7.5mm from the turntable (it is best to use some instrument like that depicted in Fig.2).

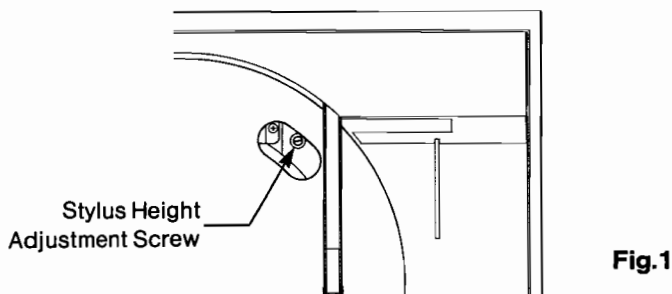


Fig.1

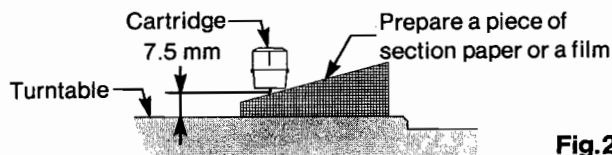


Fig.2

ROTATION ADJUSTMENT

1. Replace the belt and turntable mat and set the SPEED switch to 45 rpm.
2. Using a stroboscope sheet, adjust VR5 on the Control PCB so that the rotation matches up (see Fig.3).
3. Set the SPEED switch to 33 rpm and carry out the same procedure with VR4.

NOTE:

Always carry out this adjustment by adjusting the 45 rpm speed first.

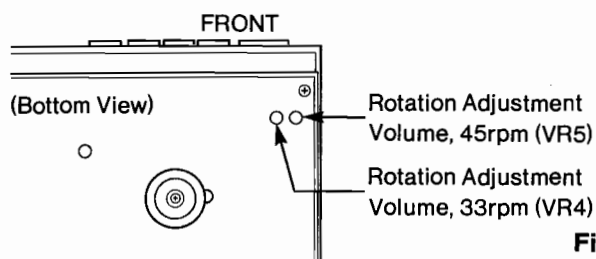


Fig.3

ARM FEED PHOTOINTERRUPTER SENSITIVITY ADJUSTMENT

1. Place a minimally de-centered record disk on the turntable and play.
2. When the turntable has completed at least 5 revolutions after the needle has dropped onto the record, press the CUEING button, lifting the tone arm.
3. At this point, adjust VR3 on the Control PCB so that the arm rises straight up (see Fig.4).

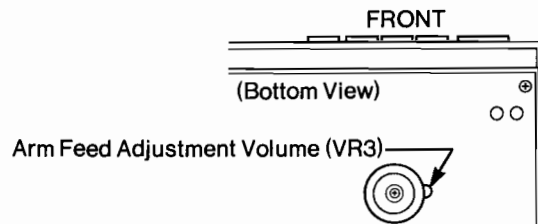


Fig.4

TRACK SENSOR SENSITIVITY ADJUSTMENT

1. Remove the unit's rear cover.
2. Connect a voltmeter (DC VTVM) to the Control PCB 3P adjustment plug's (CN7) 1 pin and 3 pin (GND) (refer to the diagram of adjustment points).
3. Remove the turntable belt and lift the turntable mat.
4. Place the standard reflective plate halfway between the turntable shaft and the edge of the turntable.
5. Turn the power on. After 15 seconds, maneuver the tone arm into position over the standard reflective plate using the ◀ button.
6. At this point, adjust VR1 on the Control PCB so that the voltmeter reads 3.8V. (In the event that you are unable to make this adjustment, remove the 100 kΩ R6 resistor between the Control PCB's IC3 pins 8 and 9 and then carry out adjustment).

NOTE:

Because the track sensor makes use of infrared light rays, avoid carrying out this adjustment in the vicinity of other infrared light ray sources, such as solar rays and incandescent lights. (Fluorescent lights do not affect this adjustment).

LEAD-IN ADJUSTMENT

1. Place a record on the turntable and press the PLAY/STOP button to begin lead-in.
2. Turn the adjustment cam so that lead-in attains the proper position (see Fig.5). (Rotating the cam clockwise moves the lead-in in toward the center, while rotating it counter-clockwise moves it out towards the edge.)

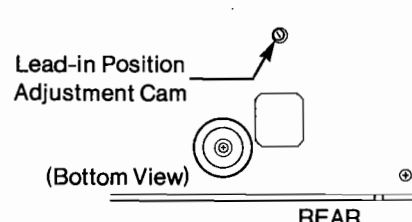


Fig.5

TURNTABLE ADJUSTMENTS (Continued)

APPROACH ADJUSTMENT

1. Set the Approach control to the center Click position.
2. Place a record containing several selections on the turntable.
3. Apply a single charge of between +5~10 volts to pin 1 of the remote control jack(J1) on the back of the unit to activate lead-in by means of the remote control signal (see Fig.6).
4. After play of the first selection has begun, apply another charge and move on to the next selection.
5. At this point, make sure that the entire selection is being played, with neither the beginning nor the end of the selection being cut off.
6. In the event that either the beginning or the end of the selection is being cut off, adjust VR2 on the Control PCB (see Fig.7).
7. Carry out this procedure several times to make sure this function is working properly.

NOTE:

If you have a pair of amplifiers available when carrying out this adjustment (the CA-870/875/885), you can also operate the song selection from the amplifier remote control by connection of the amplifier remote control terminals.

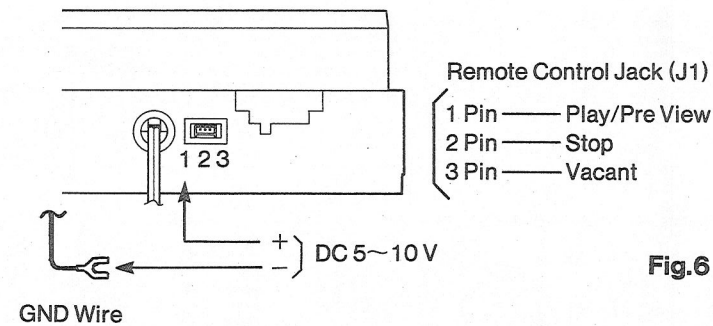


Fig.6

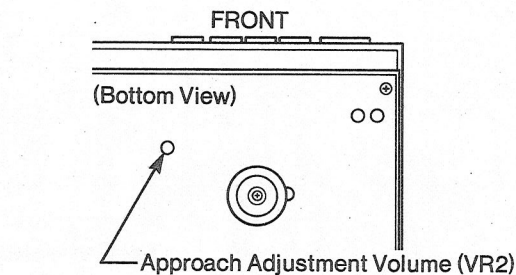
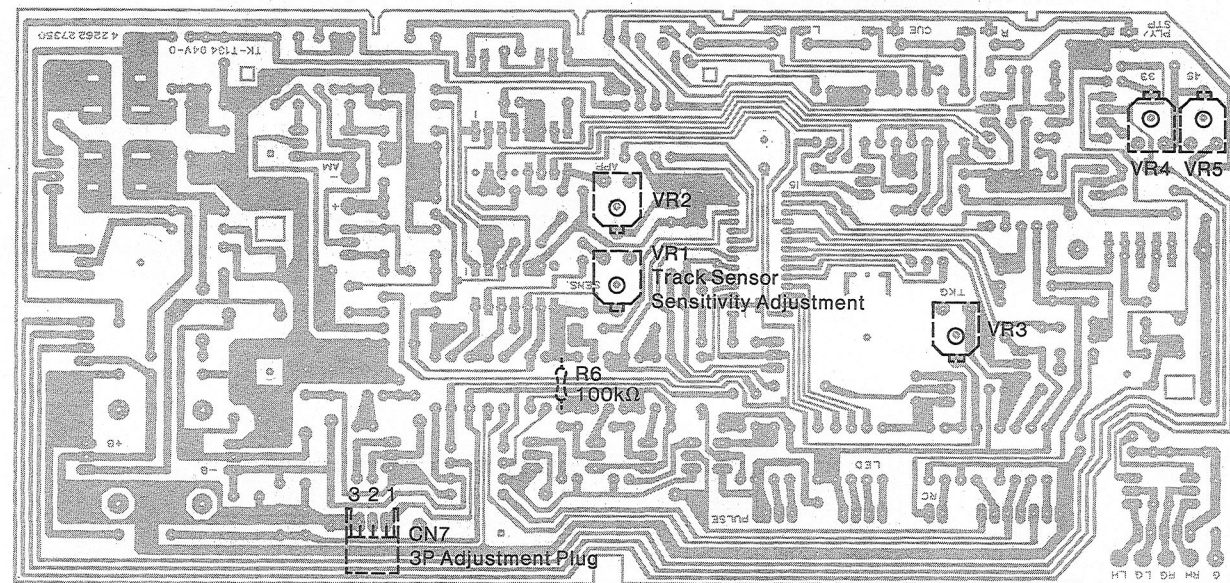
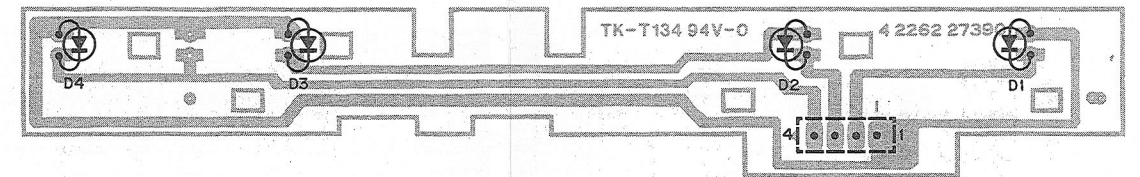


Fig.7

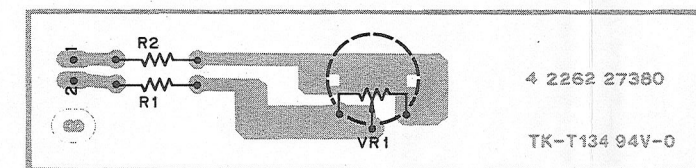
CONTROL P.C.BOARD ADJUSTMENT POINTS (BOTTOM VIEW)



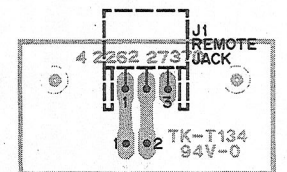
LED P.C.BOARD (BOTTOM VIEW)



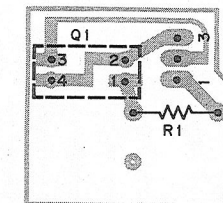
APPROACH P.C.BOARD (BOTTOM VIEW)



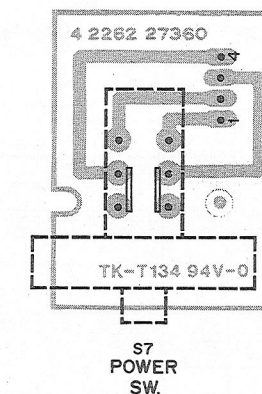
REMOTE P.C.BOARD (BOTTOM VIEW)



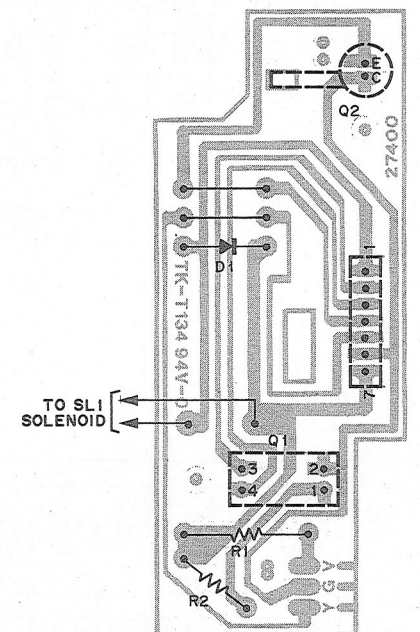
PULSE P.C.BOARD (BOTTOM VIEW)



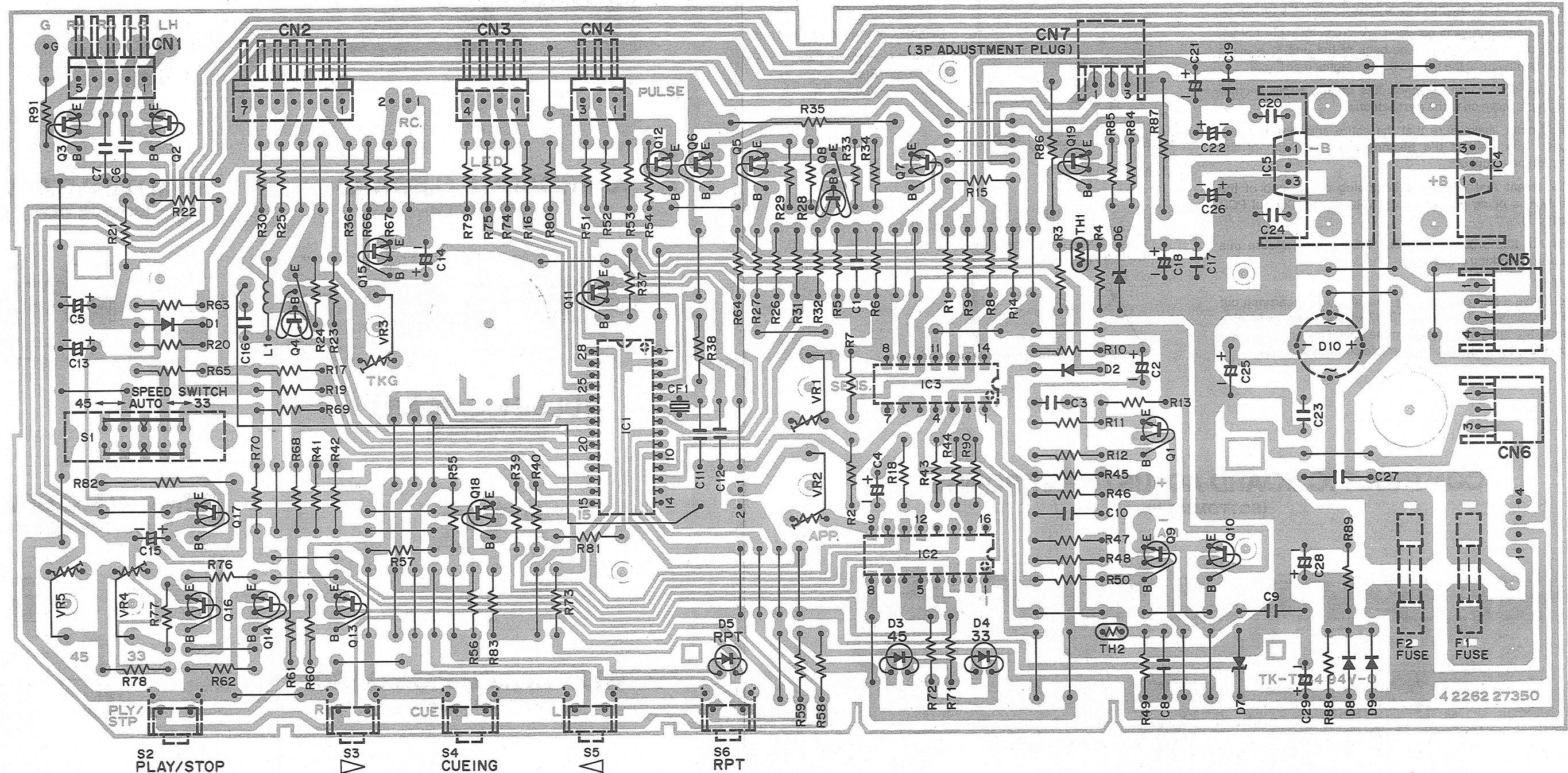
POWER SWITCH P.C.BOARD (BOTTOM VIEW)



SENSOR P.C.BOARD (BOTTOM VIEW)



CONTROL P.C.BOARD (BOTTOM VIEW)



IC PIN NUMBERS DC VOLTAGES																					
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC1	LM6416E	0.2V	6.4V	0V	0V	2.7V	2.2V	12.0V	4.6V	8.2V	8.4V	0.1V	0.1V	0V	0V	12.0V	12.0V	12.0V	14.3V	12.0V	5.2V
		21	22	23	24	25	26	27	28												
		12.0V	12.0V	12.0V	12.0V	12.6V	14.7V	12.0V	12.0V												
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC2	MN4049B	12.0V	0V	12.0V	11.9V	0.2V	0.2V	12.0V	0V	0V	12.0V	12.0V	0V	—	12.0V	0V	—				
IC3	LA6324	−0.8V	0V	0V	12.0V	—	—	—	7.2V	0.7V	0.7V	−12.2V	3.8V	7.1V	−11.6V						
IC4	NJM7812	12.0V	0V	17.0V																	
IC5	NJM7912	−12.2V	−18.0V	0V																	

TRANSISTOR DC VOLTAGES											
SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E		
Q4	2SC536	0.6V	0.1V	0V	Q12	2SC536	0.7V	0V	0V		
Q5	2SA608	12.0V	-12.2V	12.0V	Q13	2SA608	12.0V	8.2V	0V		
Q6	2SC2274	-12.2V	0V	-12.2V	Q14	2SC536	0V	12.0V	0V		
Q7	2SC2274	-12.2V	0V	-12.2V	Q15	2SC536	0V	12.0V	0V		
Q8	2SA608	11.8V	-12.2V	12.0V	Q16	2SC536	1.9V	1.2V	1.2V		
Q9	2SC2274	-0.7V	12.0V	-0.1V	Q17	2SC2274	0.1V	12.0V	0.9V		
Q10	2SA984	-0.7V	-12.2V	-0.1V	Q18	2SC536	0.7V	0.1V	0V		
Q11	2SC536	0.6V	0V	0V	Q19	2SC2274	5.9V	10.9V	5.2V		

P.C.BOARD PARTS LIST

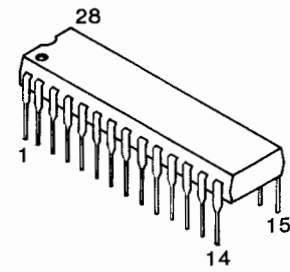
Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
CONTROL P.C.B. ASSY				Q16	203-5-5000-53670	Transistor, 2SC 536	1
PCB1	141-0-1939-15352	Control P.C.B. Assy	1	Q17	203-5-7252-27460	Transistor, 2SC 2274	1
	△ 4-2352-00200	Fuse Holder	4	Q18	203-5-5000-53660	Transistor, 2SC 536	1
	4-2359-79039	Connector 1P Assy	1	Q19	203-5-7252-27460	Transistor, 2SC 2274	1
	101-3-1303-00611	Screw, Pan Hd., +M3.0x6	2	C1	CC1-0-2500-KE00R	Ceramic 0.001μF 50V ±10%	1
	131-2-6201-35500	Plate Heat Sink (for IC4,5)	2	C2	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
	141-2-3519-79200	LED Spacer	1	C3	CM2-7-3500-K00SV	Mylar 0.027μF 50V ±10%	1
	131-2-9800-01836	Jumper (To Approach P.C.B.)	1	C4	CD2-2-5500-KHS1V	Electrolytic 2.2μF 50V ±10%	1
	131-2-9800-01071	Jumper (To Power Switch P.C.B.)	1	C5	CD4-7-6100-0001V	Electrolytic 47μF 10V	1
CN1	4-2369-22740	Plug 5P	1	C6	CI1-0-3250-MF00R	Boundary 0.01μF 25V ±20%	1
CN2	4-2369-22750	Plug 7P	1	C7	CI1-0-3250-MF00R	Boundary 0.01μF 25V ±20%	1
CN3	4-2369-22780	Plug 4P	1	C8	CC3-3-1250-KE00R	Ceramic 330pF 25V ±10%	1
CN4	4-2362-00040	Plug 3P	1	C9	CC1-0-2500-KE00R	Ceramic 0.001μF 50V ±10%	1
CN6	4-2369-73670	Plug 3P	1	C10	CI1-0-3250-MF00R	Boundary 0.01μF 25V ±20%	1
CN7	4-2369-73670	Plug 3P	1	C11	CC2-2-1500-KE00R	Ceramic 220pF 50V ±10%	1
CN8	4-2369-73673	Plug 4P	1	C12	CC2-2-1500-KE00R	Ceramic 220pF 50V ±10%	1
F1	△ 4-2349-20400	Fuse (T 630mA)	1	C13	CD4-7-4500-0001V	Electrolytic 0.47μF 50V	1
F2	△ 4-2349-20400	Fuse (T 630mA)	1	C14	CD4-7-4500-0001V	Electrolytic 0.47μF 50V	1
S1	4-2319-78290	Switch Slide (Speed)	1	C15	CD2-2-6160-0001V	Electrolytic 22μF 16V	1
S2	4-2319-75790	Touch Switch (Play/Stop)	1	C16	CI4-7-3250-KF00C	Boundary 0.047μF 25V ±10%	1
S3	4-2319-75790	Touch Switch (>)	1	C17	CI4-7-3250-KF00C	Boundary 0.047μF 25V ±10%	1
S4	4-2319-75790	Touch Switch (CUE)	1	C18	CD4-7-6100-0001V	Electrolytic 47μF 10V	1
S5	4-2319-75790	Touch Switch (<)	1	C19	CI4-7-3250-KF00C	Boundary 0.047μF 25V ±10%	1
S6	4-2319-75790	Touch Switch (Repeat)	1	C20	CI4-7-3250-KF00C	Boundary 0.047μF 25V ±10%	1
L1	4-2532-00540	Choke Coil (47μH)	1	C21	CD1-0-7160-0006V	Electrolytic 100μF 16V	1
CF1	4-2259-70780	CSB 800K	1	C22	CD1-0-7160-0006V	Electrolytic 100μF 16V	1
VR1	4-2222-01020	Semi Fixed Volume (B-200kΩ)	1	C23	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
VR2	4-2222-01010	Semi Fixed Volume (B-50kΩ)	1	C24	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
VR3	4-2222-01040	Semi Fixed Volume (B-20kΩ)	1	C25	4-2239-71360	Electrolytic 1000μF 25V	1
VR4	4-2222-01040	Semi Fixed Volume (B-20kΩ)	1	C26	CD4-7-7250-0006V	Electrolytic 470μF 25V	1
VR5	4-2222-01400	Potentiometer (B-10kΩ)	1	C27	CC1-0-3501-YEY0C	Ceramic 0.01μF 500V +100,-0%	1
TH1	204-5-9000-05000	Thermistor, SDT 500	1	C28	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
TH2	204-5-9000-05000	Thermistor, SDT 500	1	C29	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
D1	202-5-2810-44210	Diode, DS 442	1	R1	RD1-0-2251-JM000	Carbon 1kΩ 1/4W ±5%	1
D2	202-5-2810-44210	Diode, DS 442	1	R2	RD2-7-3251-JM000	Carbon 27kΩ 1/4W ±5%	1
D3	4-2029-75030	LED, SLP 960 C (45)	1	R3	RD1-8-3251-JM000	Carbon 18kΩ 1/4W ±5%	1
D4	4-2029-75030	LED, SLP 960 C (33)	1	R5	RD3-3-4251-JM000	Carbon 330kΩ 1/4W ±5%	1
D5	4-2029-75020	LED, SLP 260 CU (RPT)	1	R6	RD1-0-4251-JM000	Carbon 100kΩ 1/4W ±5%	1
D6	202-5-3210-05613	Zener Diode, GZA5.6Z	1	R7	RD4-7-3251-JM000	Carbon 47kΩ 1/4W ±5%	1
D7	202-5-3210-05113	Zener Diode, GZA5.1Z	1	R8	RD1-2-3251-JM000	Carbon 12kΩ 1/4W ±5%	1
D8	202-5-2810-44210	Diode, DS 442	1	R9	RD5-6-2251-JM000	Carbon 5.6kΩ 1/4W ±5%	1
D9	202-5-0220-01010	Diode, DSF 10 C	1	R10	RD2-2-2251-JM000	Carbon 2.2kΩ 1/4W ±5%	1
D10	DGG--W02-----	Diode, W 02	1	R11	RD1-2-2251-JM000	Carbon 1.2kΩ 1/4W ±5%	1
IC1	217-5-1326-41619	IC, LM6416E-1903	1	R12	RD1-5-4251-JM000	Carbon 150kΩ 1/4W ±5%	1
IC2	4-2069-75300	IC, MN 4049 B	1	R13	RD6-8-2251-JM000	Carbon 6.8kΩ 1/4W ±5%	1
or	4-2069-72530	IC, MSM 4049 RS	1	R14	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
IC3	206-5-1296-32410	IC, LA 6324	1	R15	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
IC4	4-2069-72560	IC, NJM 7812	1	R16	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
IC5	4-2069-72570	IC, NJM 7912	1	R17	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
Q1	203-5-5000-53660	Transistor, 2SC 536	1	R18	RD1-0-2251-JM000	Carbon 1kΩ 1/4W ±5%	1
Q2	203-5-4921-01280	Transistor, 2SD 1012	1	R19	RD2-2-2251-JM000	Carbon 2.2kΩ 1/4W ±5%	1
Q3	203-5-4921-01280	Transistor, 2SD 1012	1	R20	RD8-2-2251-JM000	Carbon 8.2kΩ 1/4W ±5%	1
Q4	203-5-5000-53660	Transistor, 2SC 536	1	R21	RD2-2-2251-JM000	Carbon 2.2kΩ 1/4W ±5%	1
Q5	203-5-7230-60860	Transistor, 2SA 608	1	R22	RD2-2-2251-JM000	Carbon 2.2kΩ 1/4W ±5%	1
Q6	203-5-7252-27460	Transistor, 2SC 2274	1	R23	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
Q7	203-5-7252-27460	Transistor, 2SC 2274	1	R24	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
Q8	203-5-7230-60860	Transistor, 2SA 608	1	R25	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
Q9	203-5-7252-27460	Transistor, 2SC 2274	1	R26	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
Q10	203-5-6820-98460	Transistor, 2SA 984	1	R27	RD5-6-2251-JM000	Carbon 5.6kΩ 1/4W ±5%	1
Q11	203-5-5000-53670	Transistor, 2SC 536	1	R28	RD1-0-3251-JM000	Carbon 10kΩ 1/4W ±5%	1
Q12	203-5-5000-53660	Transistor, 2SC 536	1	R29	RD5-6-2251-JM000	Carbon 5.6kΩ 1/4W ±5%	1
Q13	203-5-7230-60860	Transistor, 2SA 608	1	R30	RD4-7-A251-JS000	Carbon 4.7Ω 1/4W ±5%	1
Q14	203-5-5000-53660	Transistor, 2SC 536	1	R31	RD4-7-2251-JM000	Carbon 4.7kΩ 1/4W ±5%	1
Q15	203-5-5000-53660	Transistor, 2SC 536	1	R32	RD5-6-2251-JM000	Carbon 5.6kΩ 1/4W ±5%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
LED P.C.B. ASSY				PCB2	141-0-1939-15390	LED P.C.B. Assy	1
	CN3	4-2359-79184	Connector 4P Assy	1			
	D1	4-2029-75040	LED, SLR 34 VC 3	1			
	D2	4-2029-75040	LED, SLR 34 VC 3	1			
	D3	4-2029-75040	LED, SLR 34 VC 3	1			
	D4	4-2029-75040	LED, SLR 34 VC 3	1			
SENSOR P.C.B. ASSY				PCB3	141-0-1939-15400	Sensor P.C.B. Assy	1
		141-2-3519-76200	Spacer	1			
	CN2	4-2359-79022	Connector 7P Assy	1			
	Q1	4-2039-72580	Photo Interrupter (SPI 201)	1			
	Q2	4-2039-72570	Photo Transistor, TPS-613	1			
	D1	212-5-4390-13510	Diode, DS 135	1			
	R1	RH4-7-1501-JH000	Metal 470Ω 1/2W ±5%	1			
	R2	RD5-6-1251-JM000	Carbon 560Ω 1/4W ±5%	1			
PULSE P.C.B. ASSY				PCB4	141-0-1939-15410	Pulse P.C.B. Assy	1
		4-2359-79253	Connector 3P Assy	1			
	Q1	4-2039-71430	Photo Interrupter (IS 04)	1			
	R1	RD5-6-1251-JM000	Carbon 560Ω 1/4W ±5%	1			
POWER SWITCH P.C.B. ASSY				PCB5	141-0-1939-15360	Power Switch P.C.B. Assy	1
	S7	△ 4-2319-78930	Push Switch 1 Key (Power)	1			
REMOTE P.C.B. ASSY				PCB6	141-0-1939-15370	Remote P.C.B. Assy	1
	J1	4-2369-75890	Plug 3P (Remote)	1			
APPROACH P.C.B. ASSY				PCB7	141-0-1939-15380	Approach P.C.B. Assy	1
	VR1	4-2229-74810	Volume (B-50kΩ)	1			
	R1	RD1-0-2251-JM000	Carbon 1kΩ 1/4W ±5%	1			
	R2	RD1-0-2251-JM000	Carbon 1kΩ 1/4W ±5%	1			
NOTES:							
1. Parts order must contain Model Number, Part Number and Description.							
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.							
PRODUCT SAFETY NOTICE							
Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol △ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with △, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.							

SEMICONDUCTOR LEAD IDENTIFICATION

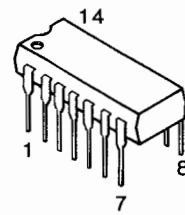
INTEGRATED CIRCUITS



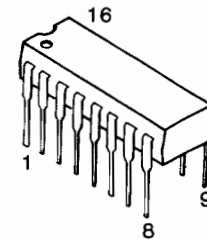
• LM 6416 E - 1903



• NJM 7812
• NJM 7912



• LA 6324



• MN 4049 B

BI-POLAR TRANSISTORS



ECB

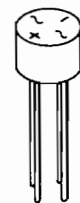
• 2SA 608
• 2SA 984
• 2SC 536
• 2SC 2274



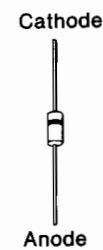
ECB

• 2SD 1012

DIODES



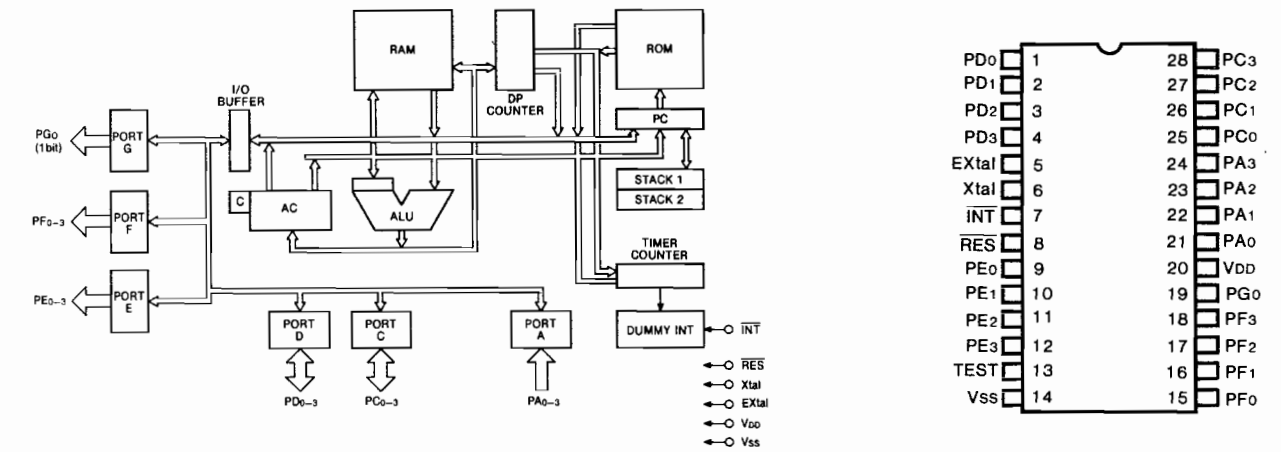
• W 02



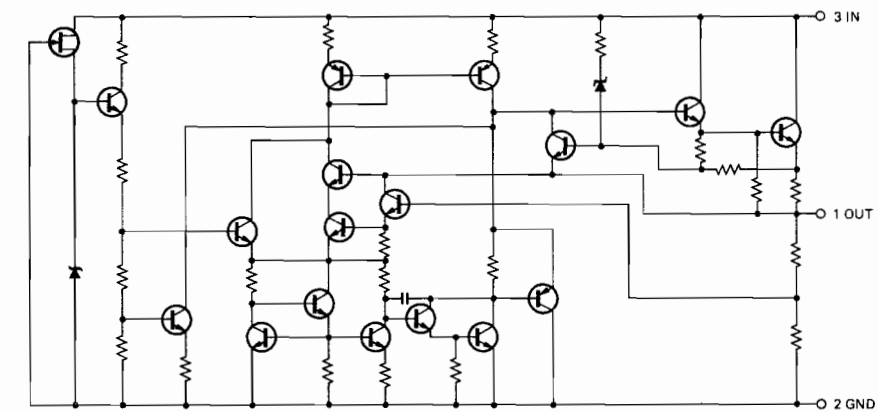
• DS 442
• DSF 10 C
• GZA 5.1 Z
• GZA 5.6 Z

IC SIGNAL FLOW & EQUIVALENT CIRCUIT

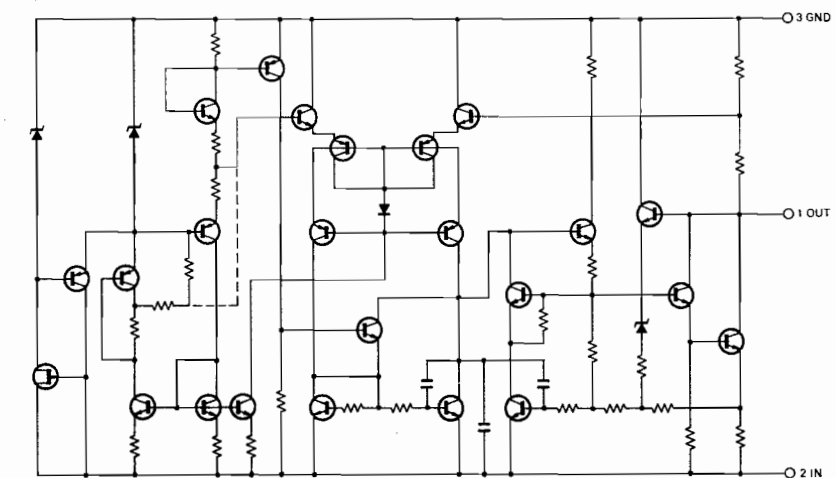
CONTROL IC LM 6416 E



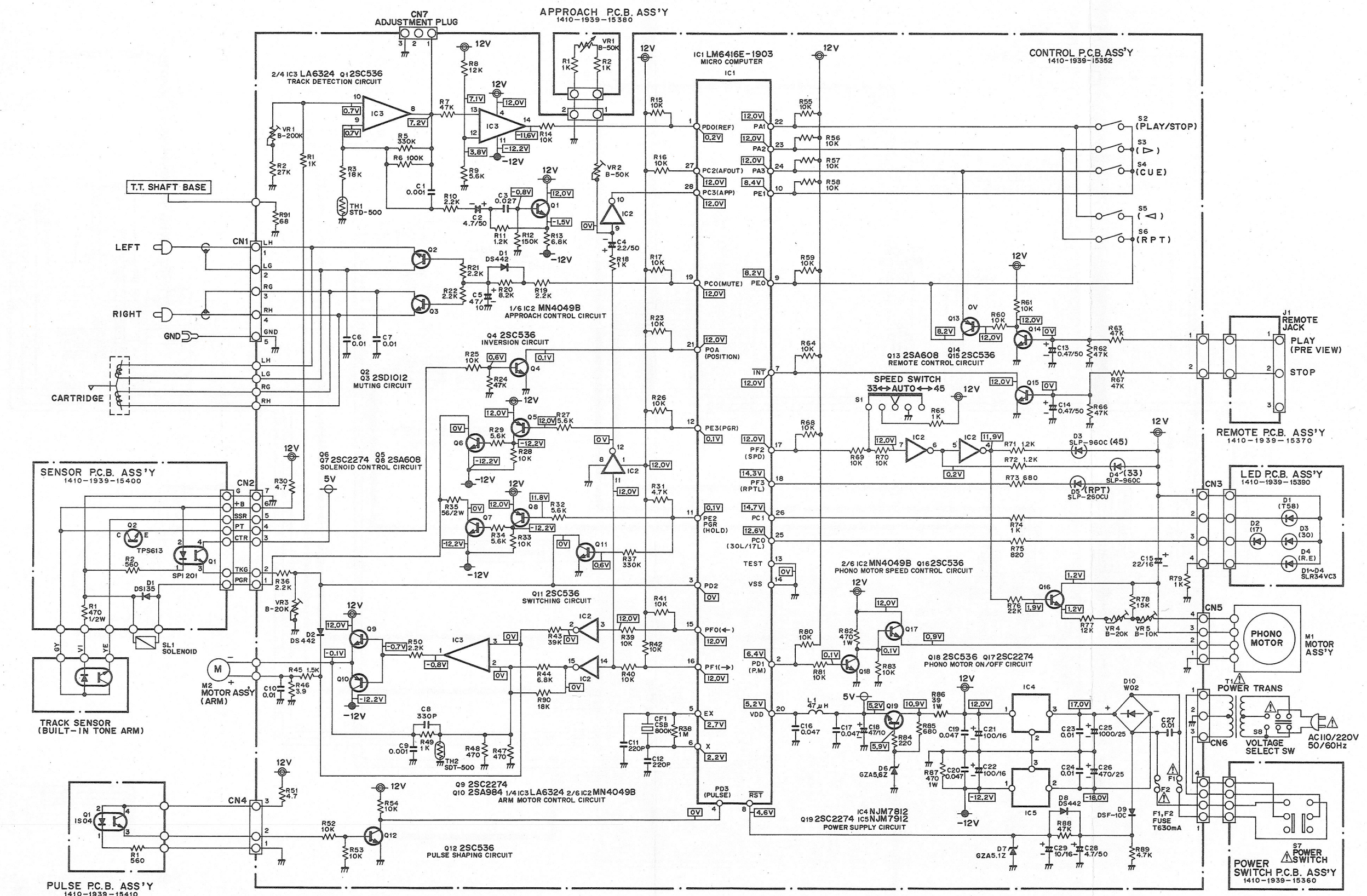
VOLTAGE REGULATOR IC NJM 7812



VOLTAGE REGULATOR IC NJM 7912



SCHEMATIC DIAGRAM



No.	Name	Position
S1	SPEED Switch	AUTO
S2	PLAY/STOP Switch	OFF
S3	(▷) Switch	OFF
S4	CUEING Switch	OFF
S5	(◀) Switch	OFF
S6	REPEAT Switch	OFF
S7	POWER Switch	OFF
S8	VOLTAGE SELECT Switch	220V

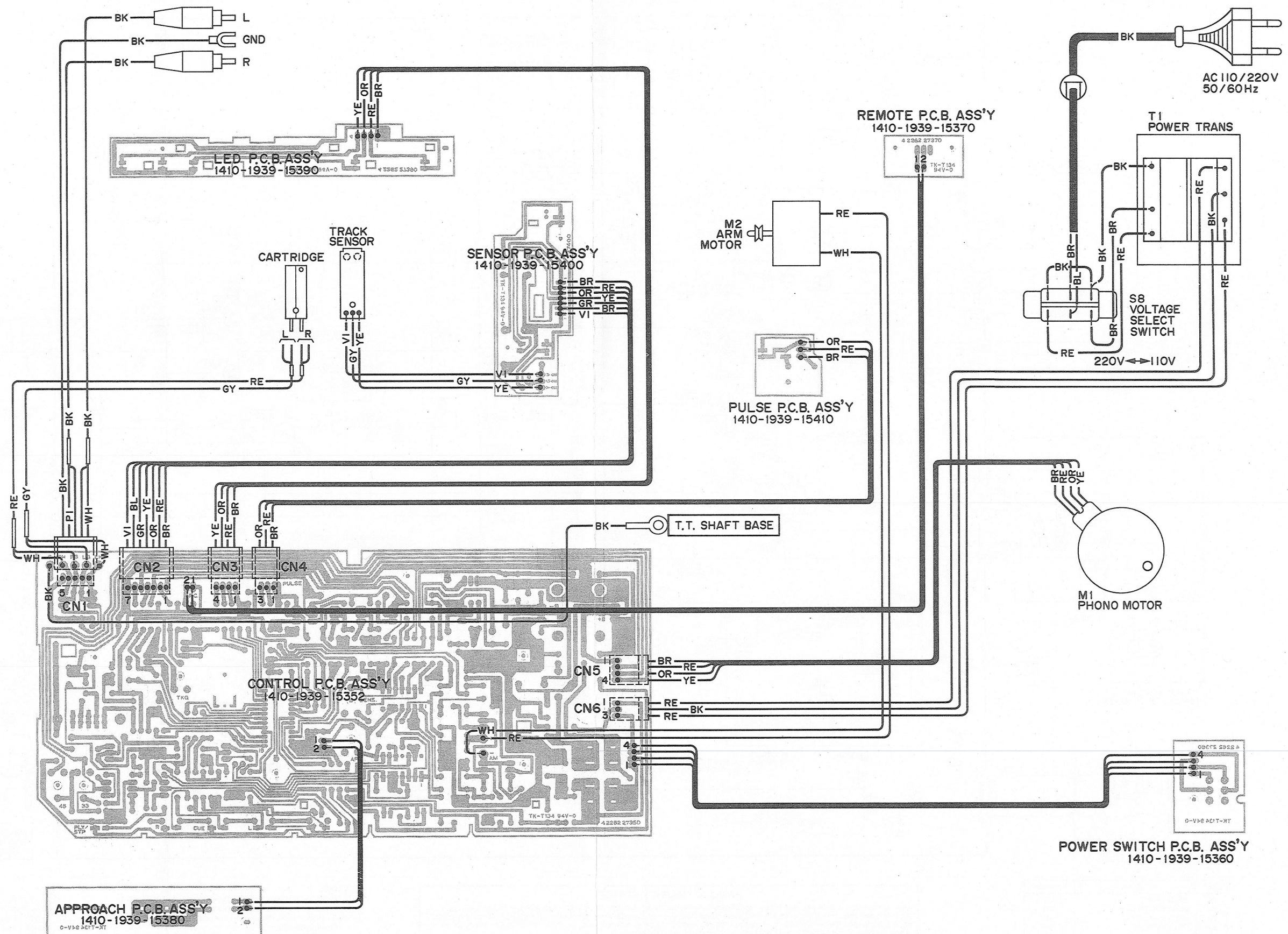
PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol  in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

NOTES:

- All resistors values are indicated in "ohm" (K=10³, M=10⁶).
 - All capacitors values are indicated in "μF" (P=10⁻¹²).
 - All voltages indicated on the schematics are measured under the following conditions.
 - Use a V.T.V.M.
 - This is a basic schematic diagram.
- Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.

POINT TO POINT WIRING DIAGRAM



MEMO

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

1 / WM16939
 HL07J208 / SERVICE MANUAL / 07226388 SANYO
 FISHER



FISHER

FISHER Hi-Fi Europa Vertriebs GmbH

Stahlgruberring 4 Tel: 089/420 45-0
 8000 München 82 Tlx: 524033

Technisches Labor/ Durchwahl -120/121
 Qualitätskontrolle

Funkstörmeßlabor -127/128

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Ersatzteillager	-155/156
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Bitte geben Sie unbedingt die Ersatzteil-Nummer und die Modellbezeichnung an.

Sie sparen so wertvolle Zeit. Vielen Dank.

January/'86/2,000 Printed in Japan

PRODUCTION CHANGE NOTICE



FISHER

Date: May, 9, 1988

Please add this notice to the Service Manuals listed below.

FULL-AUTOMATIC LINEAR TRACKING TURNTABLE

MT-870

Effective from: Serial No. Running Change

(EUROPE)

REF: WM-16939

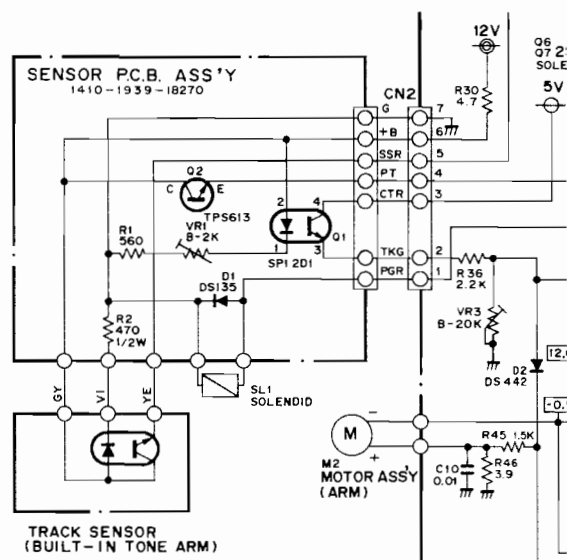
Issue Number 1

The SENSOR P.C.B. Assy is changed so that the tracking adjustment (VR3) should be adjusted easily. This is the change that the VR1(2kΩ-B) is added to the SENSOR P.C.B. Assy and the VR1 is adjusted when the VR3 is in improper.

No.	Page or Section		Ref. No.	Parts No.	Description	Q'ty	Remarks
1	Parts List Page 7	from	PCB3	141-0-1939-15400	Sensor P.C.B. Assy	1	
		to	PCB3	141-0-1939-18270	Sensor P.C.B. Assy	1	

ARM FEED PHOTOINTERRUPTER SENSITIVITY ADJUSTMENT

1. Press the ◁ button and move the tone arm so that the VR1 on the Sensor PCB can be seen in the turntable aperture. Then fully turn the VR1 counter-clockwise.
2. Place a minimally de-centered record disk on the turntable and playback.
3. When the turntable has completed at least 5 revolutions after the needle has dropped on to the recock, press the CUEING button and lift the tone arm.
4. At this point, adjust VR3 on the Control PCB so that the arm rises straight up.
5. If the adjusting range of VR3 is limited and it is hard to adjust, turn the VR1 on the Sensor PCB counter-clockwise a little and adjust again.



Reason of change: For improvement of precise adjustment

FISHER HI-FI Europa Vertriebs GmbH

Stahlgruberring 4
8000 München 82

May/'88/2,000/K

Tel: 089/420 45-0

Tlx: 524033

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A47500

REFERENCE No. WM-22678N